RESEARCH ARTICLE | FEBRUARY 14 2024

Study water quality index (WQI) for Tigris and Euphrates rivers, Iraq

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AIP Conf. Proc. 2922, 150013 (2024)

https://doi.org/10.1063/5.0183326

Rivers are one of the most important natural resources for water to be used for multiple purposes. Most of the rivers suffer from the problem of contamination, which affects their quality within the standard limits allowed globally. The applications of Water Quality Index (WQI) for the 18 monitoring stations along Tigris River (passes through Baghdad and Kut), and 25 monitoring stations along Euphrates River (passes through Elanbar, Karbala, and Hillah). WQI was applied using five water quality parameter (temperature, total dissolved solids, PH, electric conductivity, and salinity). The results show that in Tigris and Euphrates Rivers the measured temperature in selected governorates are within the CCME standard limit 15° except in Baghdad and Hillah are greater than the limit due to the different months of sampling and the hot climate in Iraq. The measured total dissolved solids (TDS) values of rivers water are higher than WHO and CCME standards limit 500 mg/L due to the low water level. All results of measured hydrogen Ion (PH) were within standard permissible limits 6.5-8.5 and 6.5-9 given by WHO and CCME respectively. The electrical conductivity (EC) of water in all monitoring stations were higher that WHO standard 1000 μS/cm and lower than CCME standard 1500 μS/cm except that in Karbala governorates which is higher than CCME standard. The results of salinity varied as electrical conductivity variations. It was found that the WQI of the Tigris and Euphrates Rivers never reached ’excellent’ levels and did not decline to an ’unsuitable’ state. The effects of the various sources of pollution were evident, and the need for extensive studies on WQI

became apparent. The WQI values as correlation shows an excellent for electric conductivity and total dissolved solids.

Topics

Electrical conductivity, **Hydrology**, **Scientific society and organization**

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